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EP 0691787 A1 WO 95/07592 A2 WO 95/05050 A1
US 5400402 A

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(54) Providing temporary access to data

(57) An apparatus for accessing data which may be audio, video, text or computer software comprises a storage element 13 for storing temporarily data from a database 10 for subsequent access by a playback device 12 and a limiting circuit included in the storage device 13 or the playback device 12 for limiting access to the data. The limiting of access may be carried out by erasing the data on the temporary storage device 13 or by inhibiting decompression or de-encrypting of the data after one or more playing on the playback device 12 or after a predetermined length of time. Data may be temporarily stored by plugging device 13 into a point of sale apparatus 21, 23 and making a selection. The point of sale apparatus 21, 23 communicates with a remote host server 10 including a large selection of data via data links. Some popular data may be stored locally at 23.

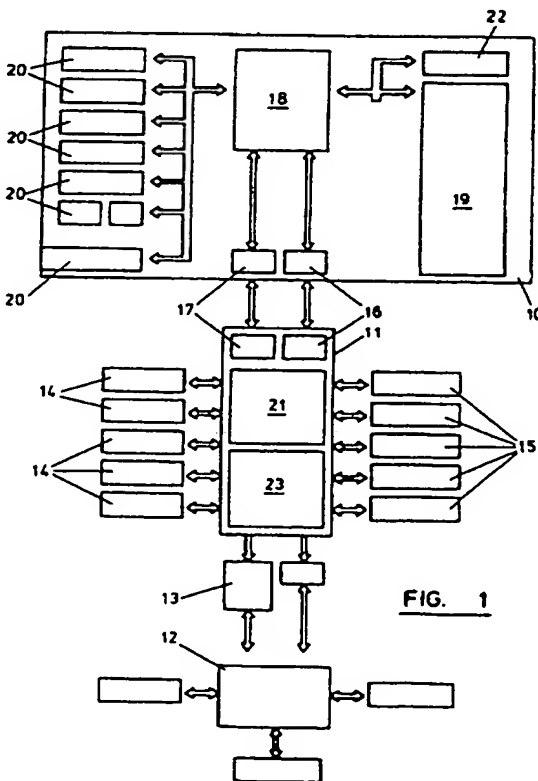


FIG. 1

At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

The claims were filed later than the filing date within the period prescribed by Rule 25(1) of the Patents Rules 1995

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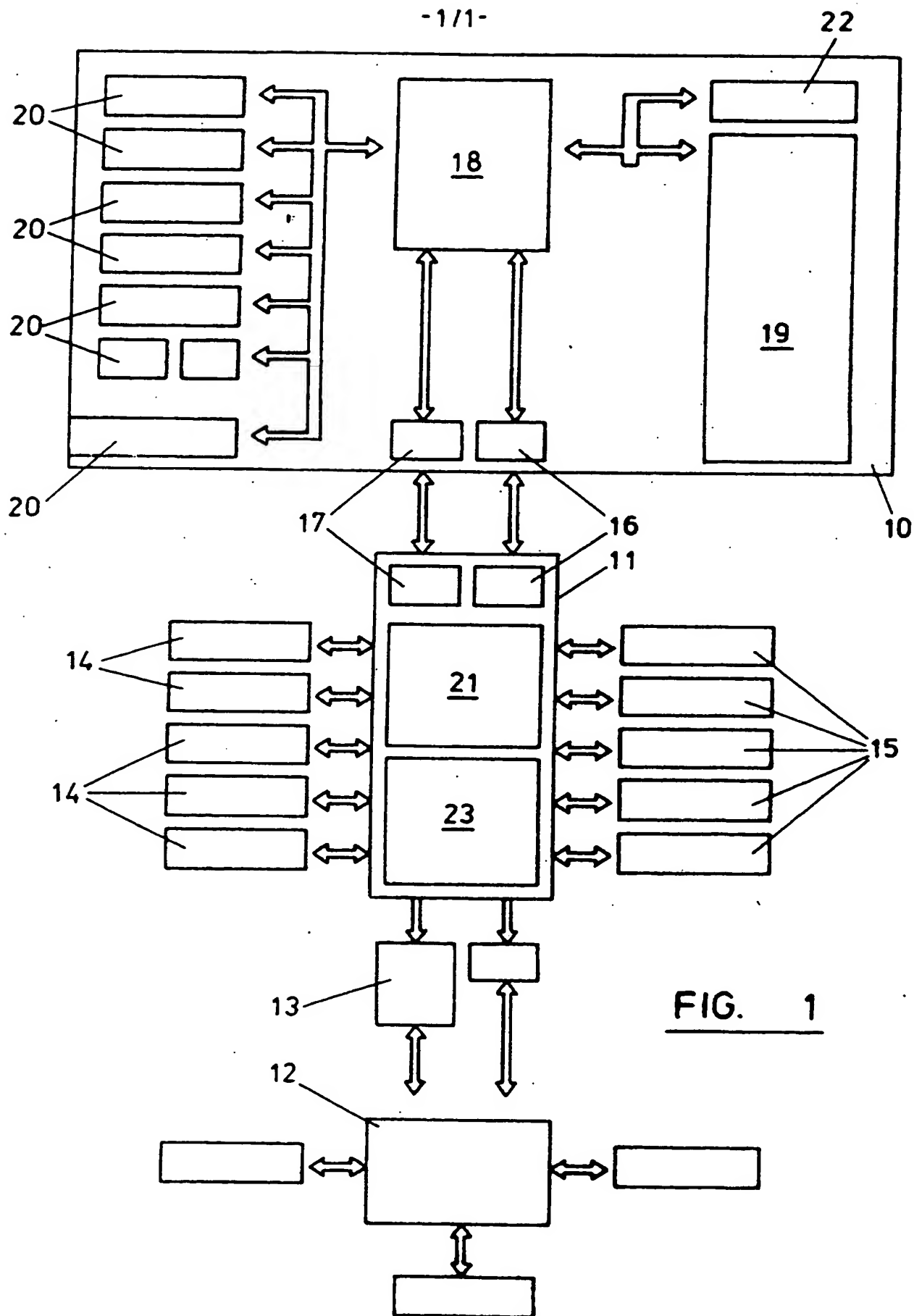


FIG. 1

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APPARATUS AND A METHOD FOR
ACCESSING DATA

5 The present invention relates to apparatus and a method for accessing data and is concerned particularly, although not exclusively, with apparatus and a method for accessing data for temporary usage by a user.

10 According to a first aspect of the present invention, there is provided data access apparatus comprising temporary storage means arranged, in use, to store temporarily data from a data base for subsequent access by playback means, the apparatus comprising limiting means arranged, in use, to limit access to the data on the temporary storage means to a predetermined extent.

15 The limiting means may be arranged, in use, to limit access to the data on the temporary storage means by erasing data on the temporary storage means after predetermined access has been made by the playback means.

20 Preferably, the limiting means is arranged, in use, to erase the data on the temporary storage means after a predetermined length of time.

 Alternatively or additionally, the limiting means may be arranged, in use, to erase the data on the temporary storage means after the data has been accessed by the playback means for a predetermined number of times.

25 As an alternative, or in addition, the limiting means may be arranged, in use, to limit access to the data on the temporary storage means by inhibiting decompression or de-encryption of the data on the temporary

storage means after predetermined access has been made by the playback means.

5 The limiting means may be arranged, in use, to inhibit decompression or de-encryption of the data on the temporary storage means after a predetermined length of time or after the data has been accessed by the playback means for a predetermined number of times.

10 The limiting means may comprise part of the playback means.

Alternatively or additionally, the limiting means may comprise part of the temporary storage means.

15 The temporary storage means preferably comprises a recording medium. The recording medium may comprise a magnetic, optical or solid state recording medium.

20 The temporary storage means may be detachable from the playback means.

Preferably, the temporary storage means is arranged, in use, to releasably engage a data recording means, which data recording means is arranged, in use, to record data on the temporary storage means.

25 The data recording means may comprise a database.

Alternatively or additionally, the data recording means may be arranged, in use, to communicate electronically with a database.

Preferably the data recording means comprises selection means arranged, in use, to permit a user to select data from a database to be recorded on the temporary storage means.

5 Preferably, the apparatus is arranged, in use, to access or transfer data which data comprises audio data.

Alternatively or additionally, the apparatus may be arranged, in use, to access or transfer data which data comprises video data.

10

Alternatively or additionally, the apparatus may be arranged, in use, to access or transfer data which data corresponds to text or computer software.

15 According to a second aspect of the present invention, there is provided a temporary data access system for the temporary accessing of data on a database by a playback means, the system comprising a database, a temporary storage means and playback means, wherein the temporary storage means is arranged, in use, to store data from the data base and the playback means is
20 arranged, in use, to access the data on the temporary storage means, the system further comprising limiting means arranged, in use, to limit the access to the data on the temporary storage means.

The limiting means may be according to any statement herein.

25

The temporary storage means may be according to any statement herein.

The playback means may be according to any statement herein.

Preferably, the system comprises data recording means arranged, in use, to record data from the database on to the temporary storage means.

5

The data recording means may be located remote from the database. Alternatively or additionally, the data recording means may be integral with the database.

10

Where the data recording means is located remote from the database, the data recording means may be arranged, in use, to communicate electronically with the database.

15

Preferably, the data recording means comprises data selection means arranged, in use, to permit a user to select data from the database to be recorded on the temporary storage means.

20

The system may comprise a system for the temporary access or transfer of data, which data comprises audio data.

Alternatively or additionally, the system may comprise a system for the temporary access or transfer of data which data comprises video data.

25

Alternatively or additionally, the system may comprise a system for the temporary access or transfer of data which data comprises text.

According to a third aspect of the present invention, there is provided a method of temporarily accessing data on a database by a playback means,

the method comprising recording data from a database on a temporary storage means and playing back the data on playback means; the method further comprising automatically limiting access to the data by the playback means.

5 The method may include erasing data on the temporary storage means after predetermined access has been made to the data by the playback means.

 The method may include automatically erasing data on the temporary storage means after a predetermined time interval.

10

 Alternatively or additionally, the method may include automatically erasing data on the temporary storage means after the playback means has accessed the data a predetermined number of times.

15 Preferably, the method includes limiting the access to the data on the temporary storage means, using limiting means.

 Alternatively or additionally, the method may include inhibiting decompression or de-encryption of data on the temporary storage means, after
20 pre-determined access has been made to the data by the playback means.

 The method may include automatically inhibiting decompression or de-encryption of data on the temporary storage means after a predetermined time interval or after
25 the playback means has accessed the data a predetermined number of times.

 The method may include recording the data on the temporary storage means using recording means.

The method may include downloading data from a remote database to the recording means. The method preferably includes downloading the data from the database to the recording means using a data link and/or at least one modem.

5

Preferably, the method comprises mounting the temporary storage means in engagement with the recording means to record data on the temporary storage means, and mounting the temporary storage means in engagement with the playback means to enable data on the temporary storage means to be played by the playback means.

10

The method may comprise a method of accessing data on a database by a playback means, which data comprises audio data.

15

Alternatively or additionally, the method may comprise a method of accessing data on a database by a playback means which data comprises video data.

20

Alternatively or additionally, the method may comprise a method of accessing data on a database by a playback means which data comprises text.

The invention may also include any combination of the features or limitations referred to herein.

25

Data links may include a LAN and/or a WAN.

The invention may be carried into practice in various ways, but an embodiment will now be described by way of example only, with reference to the accompanying diagrammatic drawing in which:

5 Figure 1 shows, schematically, apparatus for accessing data, according to an embodiment of the present invention.

Referring to Figure 1, this shows data access apparatus comprising a central database system 10, a "point of sale" recording device 11 and a
10 playback device 12. The example shown in Figure 1 comprises a system for the temporary recording of data consisting of music or other data. The playback device 12 comprises a portable device which may, for example, be located in a vehicle. A plug-in data storage device 13 temporarily stores recorded music which, when the storage device 13 is plugged into the
15 playback device 12, may be accessed by the playback device 12 to play the music in the vehicle. The playback device 12 may utilise existing audio equipment (not shown) in the vehicle to play the music.

The music is recorded on the storage device 13 by removing the
20 storage device 13 from the playback device 12 and plugging it in to the recording device 11. A user is then able to select music tracks to be recorded on the storage device 13 from a selection of available music, information about which may be displayed on display monitors 14. The selection may be made using key pads 15.

25

The music tracks themselves are stored in the central data base 10 which may be located remote from the recording device 11, and accessed by the recording device using a data link 16 and/or via modems 17.

The storage device 13 comprises a limiting device (not shown) which limits access to the recorded music by the play back means. This is achieved using electronic circuitry (not shown) in the storage device 13 which erases the recorded data after a predetermined time interval has elapsed, or else after
5 the playback device 12 has accessed the data a predetermined number of times.

Alternatively or additionally, where the data on the temporary storage means is stored in compressed form or encrypted form, the limiting device
10 may be arranged to inhibit decompression or de-encryption of the data after a predetermined time interval has elapsed, or else after the playback device 12 has accessed the data a predetermined number of times.

In an alternative arrangement, the limiting device may be located within
15 the playback device 12.

The apparatus thus enables a user to temporarily obtain recorded music for playback in the vehicle, selecting from a wide range of available recordings stored on the central database 10. The recording device 11 may
20 be located, for example, by the roadside, and preferably is located in a fuel station or similar. It is envisaged that a plurality of recording devices 11 will be provided at outlets in different geographical locations.

After predetermined access to the recorded music by the playback
25 device 12, the music is erased and the user must obtain a new recording by visiting one of the outlets at which there is a recording device 11.

No music recordings need be kept at the recording device 11, since the device 11 may access the central database 10 on which may be stored a large number of music recordings. The choice available for the user at the point of sale, i.e. the recording device 11 may therefore be extensive without the need to stock large number of expensive music recordings at the point of sale. However, more popular recordings may be held at the recording device 11 to reduce the time taken to download recordings onto the storage device when certain popular recordings are selected.

A more detailed description of the apparatus of Figure 1 will now be provided.

The central database 10 comprises a main host computer 18, which maintains a master library of data, stored in compressed form in a memory 19. The memory 19 is capable of storing large quantities of data including such information as the titles and serial numbers of recordings as well as the recordings themselves. The memory may comprise a number of conventional hard disks or optical disks. The host computer 18 indexes the library of data using a master catalogue which is also maintained in the memory 19. Each product, i.e. recording or collection of recordings in the memory has data relating to it which is stored in the library in memory 19. Fields of data relating to each product, which are stored in the memory 19, may include the following.

1. A title field - to contain the name or label of the product.

2. A classification field - to contain the primary classification of data e.g. music, and secondary classifications to enable more specific selection of material by the user.
- 5 3. Data address field - containing the beginning address in the bulk storage unit in which the data is stored.
4. Product size field - containing the number of bytes in length of the data.
- 10 5. Play count field - containing a counter which indicates the number of times a specific product has been accessed.
6. Cost field - containing the pricing structure information for the specific product.
- 15 7. Restrictions field - available for copyright holders to limit access or use of the product as they see fit.
- 20 8. Special promotion field - available to contributors to allow reduced cost or free use of the data for special promotions.

The central database 10 communicates with the point of sale recording terminals 11 using either a plurality of conventional data links 16 and/or via modems 17 or, for example, may utilise a satellite communications link. In addition to data being downloaded from the central database 10 to the terminals 11, the terminals 11 also download data to the central data base 10, such that the central data base 10 may contain up to date information, for

example, about the performance of the terminal 11 and the number of times each product is requested. Apart from enabling the maintenance of a good selection of popular products on the data base 10, and the deletion of unpopular products if required, the regular two-way communication between
5 the central data base 10 and the point of sale recording terminal 11 facilitate the accurate payment of royalties to royalty collection agencies in respect of the recordings which are chosen by the users.

The data base 10 may be updated easily and regularly with new
10 products using input devices 20 which may comprise any or all of the following.

CD-ROM reader; DAT tape player; video tape player; record
player; cassette player; scanner and OCR system and data super-
15 highway connection.

The recording terminal 11 displays on display monitors 14 details about products available which may include special promotions and compilations and the prices of the product. The storage unit 13 is then plugged in to the
20 recording terminal 11 and is mechanically or otherwise locked in place. Using menu displays on the monitors 14, the user may then make a choice as to which recordings are to be made on the storage device 13, and the choice of recordings is entered via key pads 15 in to a point of sale computer 21 located within the recording terminal 11. At this point, the user may also
25 indicate the length of the required hire period, e.g. eight hours or else two plays on the playback device 12.

Data concerning the choices made by the user is then stored in a memory 23 of the recording terminal 11 for subsequent downloading to the central database 10, in order that the central database 10 may update its records.

5

A communication link is then established by the recording terminal to the central database 10. The communications link may comprise a conventional data link, a modem link, a satellite link, or any combination of these.

10

The computer in the recording terminal may then perform various tasks such as logging on identification numbers of the storage device and checking whether the storage device has been reported as stolen.

15

The host computer then requests and assembles the required selections of data from the catalogue and library. The data may be passed to a data compression circuit 22 to compress the data.

20

The recording data is then sent to the recording terminal 11 after the host computer 18 has checked that it has received all of the necessary transaction data from the recording terminal 11.

25

Once the recording data has been accessed by the recording device, the recording device indicates this to the user on one of the display monitors 14. The user may then be invited to pay for the recordings at a pay kiosk. When payment has been made an operative may release the storage device from the recording terminal, which storage device now contains the selected recordings.

The recording terminal 11 contains a memory storage unit (not shown) which contains a sub-set of the data found in the master library of the central database, which sub-set is maintained by the central database. In particular, the storage unit at the point of sale recording terminal stores a data library which is a corresponding sub-set of the master library. The data library contains all of the currently available data selections. The storage unit also stores a catalogue which is an index into the local data library. This catalogue is similar to the master catalogue. Both the data library and its associated catalogue are monitored and updated by the central database system 10 as required through the communications link. The point of sale recording terminal permits this monitoring activity as and when is necessary, but it may conveniently take place after the close of business and, for example, through the night.

The point of sale recording terminal also includes a processing circuit (not shown) which contains a microprocessor ROM and RAM as in a conventional computer. The microprocessor operates in accordance with a software program contained in the ROM and makes use of the RAM for scratch pad memory. The processing circuit may also contain a decompression circuit (not shown) or make use of a software algorithm to decompress the data received from the central database 10 in order that the data received from the central database 10 may be downloaded to the temporary storage device. Alternatively, for improved security against unauthorised access, and for a greater speed of data transfer and lower storage space, the data may be downloaded onto the temporary storage device in compressed form.

The processing circuit controls the manipulation and flow of data in and out of the point of sale recording terminal 11 through the modem via a bus. Handling the bus, the processing circuit also controls the display monitors 14, the key pads 15 and also relates information regarding hire charges etc to the operative at the pay kiosk who is responsible for the point of sale recording terminal.

A magnetic card swipe system may, as an alternative, be included in the point of sale recording terminal to allow for an alternative method of payment for the hire of the product.

The playback device 12 is arranged, in use, to receive the temporary storage device 13 which comprises a plug in non-volatile re-writable medium which may be up to approximately one gigabyte in capacity. It is envisaged that several hours worth of recorded music may be stored temporarily on the temporary storage device 13.

The playback device 12 comprises a RAM which may be read from or written in to by the microprocessor, a high quality sound card which permits the playback device 12 to provide full digital quality sound output to the existing vehicle audio system, a central processing unit which controls the operation and regulation of all of the electronic systems within the playback device 12 and, where appropriate, a mains or low voltage (e.g. twelve volt) power supply which permits the system to be linked to the power supply of the vehicle.

The apparatus described above enables the hire of music temporarily, whilst maintaining accurate records as to which recordings are selected, how

many times each recording is selected and which therefore permits accurate calculation of royalties whilst providing useful market research information. Since the recording by the user may be accessed only for a limited period of time or for a limited number of times, it is envisaged that the conventional
5 sale of music recordings will not be affected. On the contrary, the apparatus described above may stimulate the purchase of conventional music recordings since it permits the user to temporarily hire recordings for the purpose of evaluation.

10 Whereas the apparatus has been described above in relation to the temporary recording of music it may equally be employed in the temporary recording of other data which may include video recordings, video games, video recordings of printed publications and recorded text.

15 Whilst the playback device has been described above in relation to use in a vehicle, it may alternatively or additionally be employed in the home or work place. In addition, whereas the means by which the data is transferred from the point of sale recording terminal to the playback device has been described above in terms of a plug in temporary storage device, it may
20 alternatively or additionally comprise a communications link, such as a conventional data link.

It will be apparent to the skilled person that various modifications may be made to the invention without departing from its scope.

CLAIMS:

1. Data access apparatus comprising temporary storage means arranged, in use, to store temporarily data from a data base for subsequent access by playback means, the apparatus comprising limiting means arranged, in use, to limit access to the data on the temporary storage means to a predetermined extent.
2. A temporary data access system for the temporary accessing of data on a database by a playback means, the system comprising a database, a temporary storage means and playback means, wherein the temporary storage means is arranged, in use, to store data from the data base and the playback means is arranged, in use, to access the data on the temporary storage means, the system further comprising limiting means arranged, in use, to limit the access to the data on the temporary storage means.
3. Apparatus or system according to any preceding claim, wherein the limiting means is arranged, in use, to limit access to the data on the temporary storage means by erasing data on the temporary storage means after predetermined access has been made by the playback means.
4. Apparatus or system according to any preceding claim, wherein the limiting means is arranged, in use, to erase the data on the temporary storage means after a predetermined length of time.
5. Apparatus or system according to any preceding claim, wherein the limiting means is arranged, in use, to erase the data on the temporary storage means after the data has been accessed by the playback means for a predetermined number of times.

6. Apparatus or system according to any preceding claim, wherein the limiting means is arranged, in use, to limit access to the data on the temporary storage means by inhibiting decompression or de-encryption of the data on the temporary storage means after predetermined access has been made by the playback means.

7. Apparatus or system according to any preceding claim, wherein the limiting means is arranged, in use, to inhibit decompression or de-encryption of the data on the temporary storage means after a predetermined length of time or after the data has been accessed by the playback means for a predetermined number of times.

8. Apparatus or system according to any preceding claim, wherein the limiting means comprises part of the playback means.

9. Apparatus or system according to any preceding claim, wherein the limiting means comprises part of the temporary storage means.

10. Apparatus or system according to any preceding claim, wherein the temporary storage means comprises a recording medium.

11. Apparatus or system according to any preceding claim, wherein the temporary storage means is arranged, in use, to releasably engage a data recording means, which data recording means is arranged, in use, to record data on the temporary storage means.

12. Apparatus or system according to claim 11, wherein the data recording means comprises a database.

13. Apparatus or system according to claim 11 or claim 12, wherein the data recording means is arranged, in use, to communicate electronically with a database.

5 14. Apparatus or system according to claim 11 or any succeeding claim, wherein the data recording means comprises selection means arranged, in use, to permit a user to select data from a database to be recorded on the temporary storage means.

10

15. Apparatus according to any preceding claim, wherein the apparatus is arranged, in use, to access or transfer data which data comprises audio or video data or which data corresponds to text or computer software.

15

16. A system according to any preceding claim comprising data recording means arranged, in use, to record data from the database on to the temporary storage means.

20 17. A system according to claim 16, wherein the data recording means comprises data selection means arranged, in use, to permit a user to select data from the database to be recorded on the temporary storage means.

25 18. A system according to any preceding claim comprising a system for the temporary access or transfer of data, which data comprises audio or video data or which data comprises text.

30 19. A method of temporarily accessing data on a database by a playback means, the method comprising recording data from a database on a temporary storage means and playing back the data on playback means, the method further comprising automatically limiting access to the data by
35 the playback means.

20. A method according to claim 19, wherein the method includes erasing data on the temporary storage means after predetermined access has been made to the data by the playback means.

5

21. A method according to any preceding claim, wherein the method includes automatically erasing data on the temporary storage means after a predetermined time interval.

10

22. A method according to any preceding claim, wherein the method includes automatically erasing data on the temporary storage means after the playback means has accessed the data a predetermined number of times.

15

23. A method according to any preceding claim, wherein the method includes limiting the access to the data on the temporary storage means, using limiting means.

20

24. A method according to any preceding claim, wherein the method includes inhibiting decompression or de-encryption of data on the temporary storage means, after predetermined access has been made to the data by the playback means.

25

25. A method according to any preceding claim, wherein the method includes automatically inhibiting decompression of de-encryption of data on the temporary storage means after a predetermined time interval or after the playback means has accessed the data a predetermined number of times.

30

26. A method according to any preceding claim, wherein the method includes recording the data on the temporary storage means using recording means.

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27. A method according to any preceding claim, wherein the method includes downloading data from a remote database to the recording means.

5 28. A method according to claim 27, wherein the method includes downloading the data from the database to the recording means using a data link and/or at least one modem.

10 29. A method according to any preceding claim comprising mounting the temporary storage means in engagement with the recording means to record data on the temporary storage means, and mounting the temporary storage means in engagement with the playback means to enable data on the
15 temporary storage means to be played by the playback means.

30. A method according to any preceding claim, comprising a method of accessing data on a database by a playback
20 means, which data comprises audio data or video data or text.

31. An apparatus, a system or a method substantially as
25 hereinbefore described with reference to the accompanying drawing.



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Claims searched: ALL

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Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.O): H4R: RCT, RCST, RCSS, RCS, RCC, RCX; G4A: AAP

Int Cl (Ed.6): G11B, H04H, H04N

Other: Online: WPI, JAPIO, INSPEC

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
E,X	EP 0691787 A1 SONY - see especially lines 18-28 in column 6	1, 2, 19
X	WO 95/07592 A2 INTERNATIONAL - see especially lines 29-31 on page 6	1, 2, 19
A	WO 95/05050 A1 BV TECHNOLOGY - see especially figures 1 and 8	1, 2, 19
X	US 5400402 NORTON - see especially lines 18-37 in column 2	1-5, 15-23, 27, 28 and 30

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.